

**PEER REVIEW COMMITTEE MEETING
MEETING SUMMARY**

January 25, 2002 - Friday
8:30 A.M. - 4:30 P.M.

Southern California
Association of Governments
818 W. 7th Street, 12th Floor
Los Angeles, CA 90017
Room – San Bernardino Room

Participants

Keith Killough - Moderator
Bruce Spear – Federal Highway Administration
Jim Fennessy - Tranplan software developer
David Kurth - Parsons Transportation Group
Mark Bradley - Private consultant
Maren Outwater – Cambridge Systematics, Inc.
Frank Koppelman - Professor of Civil Engineering and Transportation at Northwestern University
Ron Taira – Orange County Transportation Authority
Chaushie Chu - Los Angeles County Metropolitan Transportation Authority
Luke Cheng – Los Angeles County Metropolitan Transportation Authority
Gerald Bare- Caltrans
Tony Van Haagen - Caltrans
Mark Pisano - SCAG
Jim Sims - SCAG
Deng Bang Lee - SCAG
Hasan Ikhrata - SCAG
Guoxiong Huang - SCAG
Jim Jacob - SCAG

Background

In reviewing recent modeling results produced by SCAG's Regional Transportation Model, several freeway segments were projected to have lower peak-period total vehicle volumes in the future year 2025 than in the base year 1997. This phenomenon of diminishing freeway volumes is especially pronounced when only peak period light-duty vehicles are reported. These modeling results have raised questions regarding the "reasonableness" of the forecast produced by SCAG's Transportation Model and have been called "counter-intuitive" by some observers in view of overall regional growth.

SCAG's Modeling Staff performed an extensive evaluation of this issue. A Peer Review Committee was convened to review SCAG's analysis and conclusions. The Committee's morning sessions focused on an overview of SCAG's modeling process and a description of the modeling parameters and inputs. In the afternoon session, SCAG staff presented a summary of SCAG's model evaluation. The evaluation included a comparison of results with the travel forecasting models now used by SCAG, MTA, and OCTA. The Committee was then provided an opportunity to discuss SCAG's evaluation and provide their recommendations and conclusions.

Meeting Objectives

The Peer Review Panel, composed of modeling experts, was asked to review SCAG's evaluation and conclusions.

- 1) Based upon the state-of-the-practice in transportation modeling, is the SCAG Model a reliable tool for use in the regional planning process?
- 2) Are the modeling results consistent with the inputs and assumptions?
- 3) What improvements or enhancements should be made to the model?

Major Conclusions

The following are the Peer Review Committee's general conclusions regarding the reliability of SCAG's Regional Transportation Model. These conclusions represent the group's general consensus.

- 1) The SCAG Transportation Model provides a good example of state-of-the-practice modeling techniques and should provide a reliable tool for evaluating the transportation impacts of regional land use and transportation

system changes. It was noted that various aspects of the SCAG Regional Transportation Model are toward the leading edge of the state-of-the-practice.

- 2) The 2025 regional travel projections are reasonable given the projected changes in land use, population and employment. However, questions exist regarding whether or not the SCAG Growth Forecast is feasible and consistent with the projected transportation system. The transportation model performs as expected and the noted declines in some projected highway volumes are primarily the product of urban activity redistribution in the SCAG Growth Forecast.
- 3) The SCAG Transportation Model will benefit from several current enhancements and the wealth of empirical data now being collected. Several improvements were suggested for the transportation model particularly focusing on refining the trip distribution component, adding more specification in the mode choice model, and fine-tuning the highway network assignment methodology as the elements having the most significant enhancement potential. The absence of a transportation component in the Growth Forecasting Model derived from the Transportation Model is the most critical deficiency among SCAG's current planning analysis tools.

Recommendations

The following is a summarized list of recommendations from various Committee members regarding future model improvements. The recommendations will be considered for implementation in the upcoming calibration/validation of SCAG's Regional Transportation Model.

- 1) When presenting modeling results, include trucks in the analysis. Depictions of highway assignment results without trucks can be misleading given the projected volume of truck projections and their impact on congestion.
- 2) Enhance the interaction between the growth forecasting process and the transportation model. SCAG needs to demonstrate that growth forecasts are consistent with available transportation system capacity -- both with and without transportation system improvements. That is, the growth forecasting process should include an accessibility component from the transportation modeling process.

- 3) Investigate the effects of SCAG's demographic projections on areas outside of the Region – San Diego and Imperial Counties.
- 4) SCAG is currently conducting a study to forecast employment by both 2 digit SIC and income level. Members felt that the further breakdown of employment by income level would help refine the distribution model.
- 5) Validate and improve where necessary the distribution model by comparing model output to district-to-district commuter trip information from the Year 2000 Census. Also, validate the distribution model against empirical data by “backcasting” to an earlier base year, such as the 1980 or 1990.
- 6) Mode choice can be expanded based upon new empirical data and include more complexity and subtlety.
- 7) Improve toll modeling capabilities by including toll/non-toll split in the mode choice model.
- 8) Highway pricing should be reflected in both mode choice and trip assignment (tolls, operating cost, parking cost). This can be included in trip assignment as a generalized cost function.
- 9) Review the nesting and modal parameters for the high-speed mode choice model.
- 10) Review the freeway vs. arterial assignment. The diversion of traffic from the freeways to the arterials in the future seems excessive.
- 11) Committee suggested implementing a Time-of-Day Choice Model to account for peak period spreading.
- 12) Improve model consistence between MTA's Model and SCAG's Model, especially in regards to output speeds by examination of alternative travel delay functions and agreement on use of a common function.
- 13) SCAG is currently conducting a model speed evaluation and also intends on gathering speed data from various sources. Members suggested improving the estimation of speeds by also validating the model using the observed speed data.
- 14) SCAG's presentation focused on evaluating model volumes. Committee members suggested also examining the output speeds by facility type.

- 15) The relationship between input speeds, speed curves, and practical capacities are dynamic and should be further examined.
- 16) The speed issue is so important that SCAG suggested reconvening the Committee in the future to reexamine the issue.
- 17) Explore the impacts of trucks on the overall assignment of vehicles and review the assumed PCE values. Also, perform a link level evaluation of truck volumes on major trucking routes in the upcoming model validation.
- 18) Check model calibration by backcasting – checking model results against previous travel surveys and other traffic data.
- 19) Model calibration can be checked by comparing current model results for every component (especially trip distribution) against year 2000 household survey data and the Year 2000 Census. Members felt it was especially important to compare distribution results against district-to-district trip data from the Survey and the Census.